

PART I	DEPARTMENT OF HUMAN RESOURCES DEVELOPMENT	10.277
	STATE OF HAWAII	10.278
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Class Specifications  
for the

**TUNNEL MAINTENANCE TECHNICIAN SERIES**

**Series Definition:**

This series includes all classes of positions the duties of which are to perform, or supervise and participate, in the testing, repair and maintenance of all tunnel machinery and mechanical equipment, electrical systems and equipment and electronic devices and equipment; and conduct structural inspections of the tunnel buildings, tunnels and viaducts for the major tunnels and approaches.

The performance of such work requires knowledge of the practices and methods applicable to the repair and maintenance of tunnel machinery and mechanical equipment, and electrical and electronic systems and equipment, including hazards and safety practices involved in working with and around a variety of machinery, and mechanical, electrical and electronic tools and equipment; the tools, equipment and materials used in the mechanical, electrical and electronic trades; and the ability to use, with proficiency, tools and equipment used in mechanical, electrical and electronic repair and maintenance; read and interpret equipment manuals, blueprints, diagrams, sketches and other materials; estimate time and materials needed to complete assignments; recognize hazards in the work and take necessary precautions; work effectively alone as well as with other crew members; understand and follow oral and written instructions; and perform heavy lifting, moving and other manual work associated with the particular trade.

**Level Distinctions:**

Classes in this series are distinguished from each other by differences in: 1) the nature and variety of work; 2) the knowledge and abilities required; and 3) supervisory and administrative responsibilities.

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This is an amendment to the specification for the classes TUNNEL MAINTENANCE TECHNICIAN II, III & IV (TUNNEL MAINTENANCE TECH II, III & IV), which were approved on October 8, 1997.

DATE APPROVED: 7/9/99

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MIKE MCCARTNEY  
Director of Human Resources Development

**TUNNEL MAINTENANCE TECHNICIAN II**  
**(TUNNEL MAINTENANCE TECH II)**

**10.277**

**Class Distinguishers:**

Complexity: Independently inspects, tests, repairs and maintains electrical systems and equipment, and various tunnel machinery and mechanical equipment. Receives on-the-job training in electronic repair and maintenance work relative to tunnel and traffic control/monitoring systems and equipment.

Supervision: General supervision is provided by the Tunnel Maintenance Technician IV.

Full Performance Knowledge and Abilities: *(Knowledge and abilities required for full performance in this class.)*

Knowledge of: Practices and methods applicable to the repair and maintenance of a variety of machinery and mechanical equipment, and electrical systems and equipment, including hazards and safety practices involved in working with and around a variety of machinery and mechanical and electrical tools and equipment; the tools, equipment and materials used in the mechanical and electrical trades; specific repair and maintenance procedures pertinent to specialized tunnel machinery and electrical equipment and devices; unit record keeping and reporting procedures; structural inspection procedures; and emergency call-out procedures.

Ability to: Use, with proficiency, tools and equipment used in mechanical and electrical repair and maintenance; read and interpret equipment manuals, diagrams, sketches and other materials; estimate time and materials needed to complete assignments; recognize hazards in the work and take necessary precautions; work effectively alone as well as with other crew members; understand and follow oral and written instructions; perform heavy lifting (e.g., pump housing, equipment covers weighing up to 75 pounds), moving and other manual work associated with the class; assign, guide and check the work of trades personnel assigned to assist in the electrical and/or mechanical work; learn electronic repair and maintenance work relative to tunnel and traffic systems and equipment; keep records of machinery and equipment testing, repairs or maintenance; conduct structural inspections; and respond to emergency call-out to remove disabled vehicles and/or remove debris.

**Examples of Duties:** *(Positions may not be assigned all of the duties listed, nor do the examples necessarily include all the duties that may be assigned. The omission of specific statements does not preclude management from assigning such duties if such duties are a logical assignment for the position. The classification of a position should not be based solely on the examples of duties performed.)*

1. Tests and repairs electrical systems such as conduits with proper outlet and pull box, distribution and lighting panels including all wiring and breakers, additional circuits for special control switches, circuit connections, proper grounding for tools and machinery, cables and switches on appliances and tools, contact points on starters and relays, etc.
2. Tests, repairs and maintains electrical devices such as automatic transfer switches, transformers, motor control centers, battery charges, electrode stabilizing oven, photoelectric cell, etc.
3. Inspects and tests pumps (fire, drain, transfer, sump, etc.), valves (isolation, pressure sensing, pressure regulating, gate, alarm, etc.), generators, air compressors, air conditioning units, air handling units, motorized dampers, condensing units, carbon monoxide controller exhausts, powered overhead roll up doors, high capacity

tunnel exhaust and supply fans, monorail hoist, water heater, diesel motors, and other equipment; and lubricates and cleans machinery and equipment parts.

4. Dismantles and repairs machinery and mechanical equipment by repairing or replacing defective parts using hoist, jacks, hand tools, pneumatic and other power tools, e.g., repairs diesel engine of emergency generator involving fuel injector, blower, turbocharger, cooling fan and radiator, and fuel and oil pumps; and checks tunnel fans and motors, and adjusts balance and alignment using hoist, jacks, level, micrometer, plumb bob, etc.
5. Installs and adjusts functional parts of devices and control instruments using hand tools, level, plumb bob, straightedge, etc.
6. Reads and interprets operational and maintenance manuals, schedules, drawings, blueprints, specifications, diagrams and other materials in order to ensure completed work is correct and in conformance with tunnel operation requirements, and trade and technical standards.
7. Organizes and assigns work to a lower level trades person as may be assigned to assist in the electrical and/or mechanical work and checks the work while in progress or upon completion as required.
8. Under a higher level technician, participates and assists in installing, testing and repairing electronic equipment such as fiber optic interface communications equipment, automatic transfer switches, facility ground fault interceptors, microprocessor-based Remote Terminal Units, traffic signal remote amplifiers, closed circuit television, radios and various detectors; and assists in aligning, adjusting and calibrating electronic equipment according to specifications and calibrates electronic testing instruments.
9. Posts to logs scheduled tests of machinery and equipment, and records findings, repairs or maintenance and date.
10. Makes oral reports and submits work records including requests for supplies, tools and equipment.
11. Attends staff meetings and training sessions.

12. Carries out special work orders, including conducting structural inspections and reports findings.
13. Responds to emergency call-out to move disabled vehicles and/or remove debris; and operates a tow truck or pickup truck as required.

**TUNNEL MAINTENANCE TECHNICIAN III**  
**(TUNNEL MAINTENANCE TECH III)**

**10.278**

**Class Distinguishers:**

Complexity: Independently inspects, tests, repairs and maintains electronic devices and equipment, electrical systems and equipment, and various tunnel machinery and mechanical equipment.

Supervision: General supervision is provided by the Tunnel Maintenance Technician IV.

Full Performance Knowledge and Abilities: *(Knowledge and abilities required for full performance in this class.)* In addition to the knowledge and abilities required of the next lower level:

Knowledge of: Practices and methods applicable to the repair and maintenance of a variety of electronic systems and equipment, including hazards and safety practices involved in working with and around electronic tools and equipment; the tools, equipment and materials used in the electronic trades; and specific repair and maintenance procedures pertinent to specialized tunnel electronic equipment and devices.

Ability to: Use, with proficiency, tools and equipment used in electronic repair and maintenance; and assign, guide and check the work of other technicians/trades personnel assigned to assist in electronic assignments.

**Examples of Duties:** *(Positions may not be assigned all of the duties listed, nor do the examples necessarily include all the*

*duties that may be assigned. The omission of specific statements does not preclude management from assigning such duties if such duties are a logical assignment for the position. The classification of a position should not be based solely on the examples of duties performed.)*

1. Installs, tests and repairs electronic equipment such as fiber optic interface communications equipment, automatic transfer switches, facility ground fault interceptors, microprocessor-based Remote Terminal Units, traffic signal remote amplifiers, closed circuit television system, radios and various detectors (e.g., heat, smoke, and intrusion) following blueprints and manufacturers' specifications, and using hand tools and test instruments.
2. Aligns, adjusts and calibrates electronic equipment according to specifications; and, using oscilloscope and other instruments, calibrates testing instruments.
3. Organizes and assigns work to a lower level technician/trades personnel as may be assigned to assist in the electronic, electrical and/or mechanical work and checks the work while in progress or upon completion as required.
4. In addition, performs work described at the lower level.

**TUNNEL MAINTENANCE TECHNICIAN IV**  
**(TUNNEL MAINTENANCE TECH IV)**

**10.279**

**Class Distinguishers:**

Complexity: Serves as a working supervisor on a shift; oversees the work of lower level Tunnel Maintenance Technicians and other trades personnel; and performs tunnel maintenance and repair work.

Supervision Exercised: Supervises a crew of Tunnel Maintenance Technicians and other trades personnel who inspect, test, repair and maintain electronic devices and equipment, electrical systems and equipment and varied tunnel machinery and mechanical equipment.

Supervision: General supervision is provided by the Tunnel Maintenance Engineer.

Full Performance Knowledge and Abilities: (*Knowledge and abilities required for full performance in this class.*) In addition to the knowledge and abilities required of the next lower level:

Knowledge of: Pertinent policies, procedures, rules regulations and bargaining unit contract provisions; and principles and practices of supervision.

Ability to: Train, schedule, assign and evaluate the work of a crew in the repair and maintenance of tunnel and related traffic systems and equipment; provide on-the-job training; inspect the work in progress as well as completed work for workmanship and compliance with established standards; prioritize work assignments; deal effectively with others to organize, coordinate and expedite the work; understand, give and follow oral and written instructions; keep records and prepare reports; respond to work accidents so as to provide timely and effective aid and assistance; and participate in recommending budget and expenditure plan details.

Examples of Duties: (*Positions may not be assigned all of the duties listed, nor do the examples necessarily include all the duties that may be assigned. The omission of specific statements does not preclude management from assigning such duties if such duties are a logical assignment for the position. The classification of a position should not be based solely on the examples of duties performed.*)

1. Confers with other shift supervisors on needed continuity of work in progress and special work requirements, and confers with Tunnel Maintenance Engineer on work plans and workload.
2. Reviews established work plans and schedules, and inspects tunnels and approaches for special or previously unanticipated repair and maintenance needs.
3. Assigns crew members to work projects for the shift based on preventive maintenance schedules, instructions of higher-

level staff, or emergencies, and establishes priority or sequence for completion.

4. Observes work in progress, makes spot check of task performance and, as necessary, provides instruction on work processes and/or proper work methods or techniques.
5. Reviews completed work projects for adherence to standing and special instructions, adequacy of technical work results, and compliance with deadlines.
6. Reviews operational and maintenance manuals, schedules, drawings, blueprints, specifications, diagrams and other materials to ensure completed mechanical, electrical and electronic repair and maintenance work is performed correctly and in conformance with tunnel operational requirements, and trade and technical standards.
7. Reviews staff work records of completed projects to assure adherence to preventive maintenance schedules, and re-evaluates project deadlines.
8. Directs crew in emergency call-out to move disabled vehicles, remove debris and/or take related actions, involving use of tow or pickup trucks and other equipment as required.
9. Assesses the ongoing training and experience needs of each subordinate and provides on-the-job instruction as required.
10. Provides instruction and information to crew members on changes in tunnel operations and other policies, practices, and procedures.
11. Maintains records of preventive and emergency maintenance and repair work.
12. Prepares sketches and updates blueprints or diagrams of changes in wiring, equipment layout, or fabricated parts as applicable.
13. Maintains employee work records of assignments and progress, attendance and leave, and related information, and prepares annual job evaluations including discussion with affected



employees; recommends work, shift and job classification change of subordinates.

14. Prepares and recommends employee leave schedules consistent with management policy and work requirements.
15. Requisitions supplies and materials.
16. Attends staff meetings to discuss operational requirements and problems and recommends changes as necessary.
17. Recommends budgetary and expenditure plan details as appropriate and provide justification.
18. In addition, performs work described at the next lower level.